BY ORDER OF THE COMMANDER
AIR FORCE SPACE COMMAND

AIR FORCE SPACE COMMAND
INSTRUCTION 63-104

2 JANUARY 2007

Acquisition

MODIFICATIONS TO SYSTEMS AND IMPLEMENTATION APPROVAL PROCESS

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This Air Force Space Command Instruction (AFSPCI) implements Air Force Instruction (AFI) 63-1101, ***Modification Management*** and AFI 63-1201**,** ***Assurance of Operational Safety, Suitability, & Effectiveness (OSS&E)***. It directs use of a common framework and procedures for managing the ***Modifications to Systems and Implementation Approval Process*** for all Air Force Space Command (AFSPC) aircraft, Space Launch, Launch Test Range, missile and space systems, equipment and components supported by AFSPC, Air Force Materiel Command (AFMC) and other supporting agencies. Compliance with this document is mandatory for all programs and systems that Headquarters (HQ) AFSPC has been assigned Title 10, United States Code, *Armed Forces* responsibilities. Wings/Using Commands/Supported Commands or Services/Units may develop supplements or local operating instructions to further detail implementation of this instruction. If supplemented, a coordination copy will be sent to HQ AFSPC/A3/A4/A5/A6/A7. For system modifications, this instruction implements the policies in Department of Defense (DoD) Instruction (DODI) 5000.2, ***Operation of the Defense Acquisition System,*** National Security Space (NSS) Acquisition Policy 03-01, Guidance for ***DoD Space Acquisition Process,*** and Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01E, ***Joint Capabilities Integration and Development System***. This AFSPCI must be used in conjunction with AFI 10-601, ***Capabilities Based Requirements Development*** and Air Force Policy Directive (AFPD) 63-5, ***Quality Assurance***. This instruction provides direction for validation and approval of modifications to fielded acquisition program systems. The described processes will also support systems, or a system of systems independently acquired, requiring interoperability or integration with existing system architectures, as well as facilitation of evolutionary acquisition system sustainment efforts. This instruction applies to organizations that manage both temporary and permanent modifications to systems owned or managed by AFSPC, as well as non-AFSPC systems essential for support of AFSPC missions. Each AFSPC Office of Primary Responsibility (OPR) is accountable to their customers throughout the system life cycle for requirements documentation, validation and approval, as well as review of associated acquisition, sustainment and logistics factors, to include cost, schedule, performance, form, fit and function. OPR accountability includes the recognition of each customer's need dates and timelines for any required response documentation. OPRs will be sensitive to the customer's requirements and adhere to established processes and instructions to ensure customer satisfaction as well as adherence to Air Force OSS&E and Quality Assurance principles. This instruction

addresses both internal and external requirements review and program approval of system modifications, prior to their implementation. OPR responsibilities are outlined within this instruction. This instruction also applies to tenant units residing in AFSPC owned or controlled facilities and to selected Air National Guard and Air Force Reserve Command units, as appropriate. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN37-123 (will convert to AFMAN33-363), ***Management of Records***, and disposed of in accordance with Air Force Records Disposition schedule (RDS) located at **https://afrims.amc.af.mil/**.

SUMMARY OF CHANGES

This instruction replaces AFSPCI 21-104, ***Systems Requirements and Implementation Approval Process***, in its entirety. This publication has been written to provide direction for the approval of proposed system modifications and their subsequent implementation. It prescribes standard and normalized processes through a common 2-step configuration control oversight framework, providing requirements validation and approval for all AFSPC programs and systems where HQ AFSPC has been assigned Title 10 responsibilities, as well as non-AFSPC systems essential for support of AFSPC missions. This document reflects major changes in the DoD 5000-series documents, CJCSI 3170.01E, and AFIs in the 10-series, 21-series, and 63-series.

1. Responsibilities. This AFSPC instruction describes and directs the management of alterations to systems, and associated implementation approval processes, for the control of modifications to all fielded (i.e. after turnover to operations) AFSPC aircraft, Space Launch, Launch Test Range, missile, and space systems (including equipment and mission components) acquired and sustained by AFSPC, AFMC and other supporting agencies, and programs and systems where HQ AFSPC has been assigned Title 10 responsibilities, as well as fielded non-AFSPC systems essential for the execution of AFSPC missions (i.e. called "AFSPC cognizant systems" throughout this instruction). For the purposes of this instruction, Headquarters AFSPC performs the functions of the Lead Command, not functions of the Operational Command. The terms: Using Command, Operational Command, Supported Command and Supported Service are interchangeable (i.e. called "Using Command" throughout this instruction). ***NOTE***: This instruction does not govern resources not managed by AFSPC (e.g. Defense Information Systems Agency (DISA) communications systems/services).

1.1. **General.** This instruction outlines procedures for approving requests for alterations to the baseline for all AFSPC cognizant systems, and describes processes for modification management. This instruction provides direction for processing requirements for modernization and sustainment of existing AFSPC cognizant systems and infrastructures. Modifications to systems and implementation approval efforts include identifying, documenting, validating, approving, funding and accepting modifications to AFSPC cognizant systems. Configuration Management (CM) includes the configuration control of alterations to an item and/or system. The CM effort of the AFSPC organization, System Manager (SM) or other supporting agency includes providing a complete audit trail of the engineering decisions, design modifications, and documentation modifications, as well as recording the configuration of an item and controlling an item's functional and physical characteristics. CM and configuration control shall provide a complete audit trail of requests, decisions and actions to alter AFSPC cognizant systems. The SM for AFSPC cognizant systems normally resides with the System/Services Program Office (SPO) for that particular system. However, when program requirements dictate the SM not reside within a particular SPO, the system owner will recommend an appropriate SM for HQ AFSPC/ A4M approval. This instruction clarifies the roles of each OPR and functional area. See additional guidance and procedures prescribed in Wing/Using Command operations and support unit supplements and/or operating instructions. For example, for alterations to Integrated Tactical Warning and Attack Assessment (ITW/AA) systems, see guidance and procedures in North American Aerospace Defense Command (NORAD) Instruction (NI) 10-3, ***Mission Integrity, Change Control Management, and Test Control for the Integrated Tactical Warning and Attack Assessment System (ITW/AA),*** for alterations to the Launch Test Range System (LTRS), see guidance and procedures in the *HQ AFSPC LTRS* ***Requirements Validation Board Management Guide***. ***NOTE***: The direction provided by Paragraph **1.** is overarching and applies to all subsequent paragraphs of this instruction.

1.1.1. Command-level Modifications. HQ AFSPC will review, validate, approve and certify the requirement for all proposed modifications to AFSPC cognizant systems as described in **paragraphs 1.3. and 1.8.** Command-level modification proposals may be initiated by AFSPC units or agencies, users, SMs or other support organizations. Details of processes and organizational responsibilities for Command-level modifications are described in **paragraph 2.**

1.1.2. Wing-level Modifications. Requirements for proposed modifications to AFSPC cognizant systems, meeting the criteria described in **paragraph 1.8.**, will be validated and approved by the Wing/Using Command according to local directives and procedures, with an information copy provided to the HQ AFSPC Command Chief Engineer, through the HQ Modification Control Point (MCP). Wing-level modification proposals may be initiated by AFSPC units or agencies,

users, SMs or other support organizations. Details of processes and organizational responsibilities for Wing-level modifications are described in **paragraph 3.**

1.1.3. Emergency Modifications/Repairs. Emergency software and hardware actions necessary to ensure mission essential capabilities will be processed as a temporary maintenance action and are authorized approval at Wing/Using Command level. Emergencies will be processed In Accordance With (IAW) AFI 21-116, ***Maintenance Management of Communications-Electronics*** and its system-specific guidelines, and reported within 72 hours of approval to the Command Chief Engineer, through the MCP, along with notification to all interested parties. LTRS and Space Launch organizations are authorized to follow local procedures when launch time constraints dictate emergency processing. Emergency modification/repair actions that affect system baselines and are expected to remain in place past 30 days will be processed via the appropriate modification process as described in **paragraphs 2. and 3.**

1.1.4. Testing. Major test deficiencies are reported IAW TO 00-35D-54, ***USAF Materiel Deficiency Reporting and Investigating System***. Responsibilities and processes for ITW/AA testing and operational acceptance are described in NI 10-3. Operational and acceptance testing that may affect ICBM Real Property/Real Property Installed Equipment (RP/RPIE) will be conducted IAW AFSPCI 32-1005, ***Intercontinental Ballistic Missile (ICBM) Real Property/Real Property Installed Equipment Responsibilities***.

1.1.5. Configuration Management Responsibility. SMs are responsible for CM of AFSPC cognizant systems. AFSPC/using organizations and SMs are responsible for configuration control of the operational baseline of AFSPC cognizant systems, equipment and components IAW DODI 5000.2, *NSS Acquisition Policy 03-01,* AFI 63-1101, MIL-HDBK-61A, ***Configuration Management Guidance,*** software activities described in **Attachment 2,** and as documented in local regulations/procedures, where applicable.

1.1.6. Information Assurance (IA). Information and system security IAW AFSPCI 33-202, ***Information Assurance*** and Director of Central Intelligence Directive (DCID) 6/3, ***Protecting Sensitive Compartmented Information within Information Systems,*** must be addressed as a result of any modifications to operational systems.

1.1.7. Operations Security (OPSEC). Operations Security IAW AFI 10-701, ***Operations Security,*** must be addressed to avoid compromising critical information, (i.e., equipment vulnerabilities and limitations, system shortfalls that could delay/prevent nuclear weapon employment, etc.).

1.2. **Funding:**

1.2.1. Funding thresholds and approval authority for mission need modifications to establish a new operational capability, to exploit an opportunity to enhance performance, or to reduce costs on a new or existing acquisition program or system, are described in AFI 10-601, ***Capabilities-Based Requirements Development***.

1.2.2. As part of the approval/certification process, AFSPC boards (**see paragraphs 2. and 3.**) will review the requirements justification, funding availability/sources, and the Wing/Using Command-recommended priority for proposed modifications. Requirements for funding may be advocated by the originator, SM, or program lead in conjunction with the Program Element Monitor (PEM). See AFI 63-1101 if Milestone Decision Authority (MDA) determination is required and CJCSI 3170.01E for Joint Programs.

1.2.3. HQ AFSPC has approval authority for proposed modifications with implementation solutions that fall within the Lead Major Command (MAJCOM) funding constraints specified in AFI 10-601. HQ AFSPC may delegate approval authority for proposed modifications falling below those funding constraints to subordinate Wings or Using Commands as described in paragraph **1.8.** Proposed major modifications to MDAPs above the HQ AFSPC approval authority will be forwarded to the Under Secretary of the Air Force for approval IAW NSS Acquisition Policy 03-01.

1.3. **Joint Programs:**

1.3.1. Where AFSPC serves as Executive Agent, Lead Command and Air Force is Lead Service: Any proposed modification that could affect another Using nation's, service's, command's or agency's equipment must comply with Lead Operating Command guidance in AFI 10-601**,** AFPD 10-9*,* ***Lead Operating Command Weapon Systems Management***, (where applicable), and AFI 10-901, ***Lead Operating Command – Communications and Information Systems Management****,* and be coordinated with that agency's approval board(s) before receiving approval. AFSPC modification approval board responsibilities and procedures are covered in **paragraphs 2. and 3.**

1.3.2. Where AFSPC serves as Lead Command, but Air Force is not Lead Service: Any proposed modification that could affect Supported Service/Using Command equipment must be coordinated with the approval board(s) of that Service/Command before it meets the HQ AFSPC approval board.

1.3.3. Where AFSPC is not Lead Command: For those programs for which another agency is appointed as lead, proposed AFSPC modification requests will receive AFSPC validation before they are submitted to a non-AFSPC lead agency. The MCP shall function as HQ AFSPC OPR to submit proposed validated/non-validated AFSPC modifications to the lead agency and track their approval and implementation status.

1.3.4. Modifications affecting Joint Programs and/or multiple systems (**paragraph 1.4.**) or implemented by multiple SMs/support agencies will be processed as described in Modification Processing (**paragraph 1.8.**). Waiver requests will be submitted through the MCP to AFSPC/A4 for HQ AFSPC approval.

1.4. **Modifications Affecting Multiple Systems:** Modifications which may affect more than one system will be approved at HQ AFSPC and coordinated with the affected Wing/Using Commands to ensure no mission impact to those systems. HQ AFSPC approval responsibilities, processes and procedures are covered in **paragraph 2.**

1.5. **Tenant Unit Systems:**

1.5.1. AFSPC Tenant Units Residing on Non-AFSPC Facilities: AFSPC tenant units residing on non-AFSPC facilities are required to comply with host unit/MAJCOM guidance, as well as HQ AFSPC guidance. If host guidance contradicts this instruction, the AFSPC tenant unit will contact HQ AFSPC/ A4M for resolution.

1.5.2. Non-AFSPC Tenant Units Residing on AFSPC Owned or Controlled Facilities: Non-AFSPC tenant units (e.g. Air Force Technical Applications Center) residing on AFSPC owned or controlled facilities are required to comply with this instruction for all proposed modifications to AFSPC cognizant systems. Tenant units must keep their host unit and AFSPC/A4M

informed of proposed system modifications prior to their approval and implementation. Tenant units will also inform their host unit and AFSPC/A4M on modification implementation status.

1.6. **Modifications.** Alterations to a Configuration Item (CI) applicable to aircraft, missile, support equipment, ground station/ground antenna, space system, test asset, trainer, etc. cognizant systems are modifications controlled IAW this instruction. As a minimum, modifications alter the form, fit, function or interface of the item (software, hardware, firmware, ancillary services, and infrastructure), and/or alter the baseline (drawings, published specifications, configuration, technical orders/technical manuals, etc.). Further definitions of modifications and general guidance for their funding, initiation, processing, tracking, and control are found in AFI 63-1101.

1.7. **Modification Types.** Modifications to AFSPC cognizant systems can be temporary or permanent.

1.7.1. Temporary Modifications. Temporary modifications are non-permanent alterations to the configuration of a system for flight or ground test purposes or to support the accomplishment of a specific mission. Temporary modifications may be accomplished using Commercial Off-The-Shelf (COTS) and Non-Developmental Items (NDI), or stocklisted systems, equipment, spares, materials, etc., and are typically accomplished locally, by a unit, with appropriate funds. Temporary modifications will either expire, be resubmitted for time extension prior to 1 year from installation, or be resubmitted as a permanent modification. There are two subsets of temporary modifications identified and defined as follows:

1.7.1.1. Temporary-1 (T-1). T-1 modifications must be capable of being returned to original configuration within 48 hours. T-1 modifications temporarily alter the configuration of a CI to perform a special mission, or add or remove equipment to provide increased capability for a special mission. T-1 modifications are normally made by the Using Command for operational reasons, are not used as substitutes for permanent modifications, and are not authorized permanent logistics support (technical data, software modifications, engineering support, spares or support equipment, etc.). Logistics support will be constrained to the level of effort required for the temporary modification program.

1.7.1.2. Temporary-2 (T-2). T-2 modifications are required to support Developmental Test and Evaluation (DT&E). T-2 modifications will normally be accomplished on programs having an approved Program Management Directive (PMD). T-2 modifications will not be maintained on the system for longer than the approved test program requires.

1.7.2. Permanent Modifications. These modifications permanently alter the form, fit, function or interface of a configured item. All requirements resulting in a permanent modification, must apply to a program established in a PMD before initiating any work or obligating any funds IAW existing directives. Permanent modifications, except for permanent-safety modifications, will not be performed unless sufficient service life remains to justify the cost effectiveness of performing the modification. However, due to inherently limited life span, service life will not be a determining factor for launch vehicle modifications.

1.8. **Modification Processing.** All aircraft and ICBM modifications including weapon and ground systems will be processed as Command-level modifications. ICBM modifications that may affect ICBM RP/RPIE will be conducted IAW AFSPCI 32-1005. All other modifications to AFSPC cognizant systems that alter form, fit, function or interfaces will be processed as follows:

1.8.1. Form and Fit (no change in function). Alterations to the defined configuration, including the geometrically measured configuration, density, and weight or other visual shape/size parameters that uniquely characterize the physical characteristics of an item, are modifications to "form." For software, form denotes the language and media. Alterations to the "mating" characteristics of an item that allow it to physically interface or interconnect with or become an integral part of another item are modifications to "fit." Form and fit alterations will be processed as Command-level modifications, with the following exceptions:

1.8.1.1. Form and fit alterations resulting from materiel obtained through the supply system (e.g., use of suitable substitutes) will be processed IAW Air Force Manual (AFMAN) 23-110 Vol 2, ***USAF Supply Manual,*** as long as no modification to existing system interfaces is required.

1.8.1.2. Form and fit alterations relating to equipment relocations within a workspace, removal of unneeded items, deactivations in place, non-weapon system facility alterations, etc., will be processed as Wing-level modifications (**paragraph 3.**).

1.8.2. Function. Depot level maintenance alterations/additions to the action or actions that an item is designed to perform, and must be capable of performing for a defined set of conditions (functions), will normally be processed as Wing-level modifications (**paragraph 3.**). However, if any of the following restrictions are met, the proposed alterations will be processed as Command-level modifications (**paragraph 2.**):

1.8.2.1. Modifications to alter/add one or more primary functions of a fielded system will be processed as Command-level modifications. Primary functions are requirements and capabilities described in PMD, Mission Needs Statement (MNS), Capstone Requirement Document (CRD), Joint Capabilities Document (JCD), Initial Capabilities Document (ICD), Capability Development Document (CDD), Capability Production Document (CPD), Operational Requirements Document (ORD), Requirements Correlation Matrix (RCM), or equivalent documentation. Examples of primary functions are those functions described by a system's key performance parameters (KPPs), measures of effectiveness (MOEs), and/or measures of performance (MOPs). However, modifications to only alter/add sub-functions (vice primary functions) of a fielded system will be processed as Wing-level modifications.

1.8.2.2. Safety modifications will be processed as Command-level modifications, unless HQ AFSPC determines Wing/Using Command approval is authorized.

1.8.2.3. Security modifications will be processed as Command-level modifications, unless HQ AFSPC determines Wing/Using Command approval is authorized.

1.8.3. Interfaces. Those alterations to the performance, functional and physical characteristics at a common boundary between systems will be processed as Command-level modifications. Those alterations to performance or characteristics at a common boundary between subsystems, components, and units within a system will be processed as Wing-level modifications.

1.8.4. Any modification requiring funding in excess of funds programmed, provided, or to be provided to the SM or appropriate support agency for that modification, will be processed as a Command-level modification.

1.8.5. Any modification specifically identified by the MCP as requiring HQ AFSPC approval will be processed as a Command-level modification.

1.9. **Operational Safety, Suitability, & Effectiveness.** For all modifications, the system and end item OSS&E shall be preserved IAW AFI 63-1201 and related AFSPC instructions. OSS&E is integral to the modification management process and as such shall be preserved throughout modification planning and execution to ensure operational safety, design integrity and suitability for all modified systems and end items. After approval, the Lead Command will forward the modification to the SM for implementation and tracking. The SM of the system being modified is responsible for the engineering integrity of that system and IAW AFI 63-1101 will ensure CM of all modifications. Status of modifications will be reported to the Command Chief Engineer (through the MCP) quarterly, as a minimum, until closure. For modifications requiring formal AFSPC acceptance following successful completion of T&E, the Command Chief Engineer will coordinate on the plan for operational acceptance to ensure needed actions have been performed. The Command Chief Engineer will also publish a semi-annual summary report of implementation completions and acceptances**.**

1.10. **Program Baseline.** Cost, schedule, technical performance and logistics parameters must be baselined for modifications. As described in AFI 63-1101, the AF IMT 3525, **Configuration Control Board (CCB) Modification Requirements and Approval Document**, or equivalent, should be used for the modification program baseline. The Acquisition Program Baseline is designed as a top-level overview tool. Other documents can be used if they portray the essential baseline information, meet the needs of the program, and provide a viable audit trail.

1.11. **Initial Spares Support (ISS).** HQ AFSPC/A4, in conjunction with the SMs, will evaluate all modification programs for the applicability of ISS, IAW AFI 63-1101.

1.12. **Modification Documentation.** No modification will be considered completed until the appropriate technical and training documents have been updated and distributed to the affected unit(s).

2. Command-level Modification Processing:

2.1. The Command-level modification process flow for both temporary and permanent modifications is shown (with block descriptions) in **Figure 1.**. Organizational and depot level maintenance software activities are further described in **Attachment 2**. Organizational level maintenance activities are not governed by this instruction.

2.2. The AF IMT 1067, **Modification Proposal**, documents Air Force modification requests and tracks their validation, funding, and certification/approval as described in AFI 63-1101. All Command-level modification proposals (including those resulting from a **Standard Change Form (SCF) data sheet**, or equivalent Wing-level authorized modification form), shall be documented using the AF IMT 1067. Wing-level modification proposals originated by other than Air Force Services/Agencies may also use an equivalent authorized modification form.

2.3. **Roles and Responsibilities for Command-level Modifications.**

2.3.1. The Lead Command will:

2.3.1.1. Establish and conduct a HQ Requirements Validation Board (RVB) composed of panels (by AFSPC cognizant system) that will review and validate their AF IMTs 1067, per **Figure 1.,** Block 3. Panels will meet at least annually, or as frequently as necessary. A representative from AFSPC/ A3/A4/A5/A6, designated in writing, will chair each RVB panel and will develop a charter to define panel membership, responsibilities, and frequency of meetings. Wing, Using Command, SM and NAF POCs may also participate. Panels will appoint a Secretariat to ensure their RVB panel charter, modification requests, meeting min-

utes, and monthly status of open modification proposals are coordinated (through the HQ MCP) with affected parties. Out-of-cycle paper coordination is allowed for modification proposals needing expedited processing.

2.3.1.2. Establish and conduct a HQ Configuration Review Board (CRB) composed of panels (by AFSPC cognizant system) that will validate proposed prioritizations, review recommended SM solutions, and approve and/or certify AF IMT 1067 modification proposals per **Figure 1.**, Block 5. Panels will meet at least annually, or as frequently as necessary. A representative from AFSPC/A3/A4/A5/A6, designated in writing, will chair each CRB panel and will develop a charter to define panel membership, responsibilities, and frequency of meetings. Wing, Using Command, SM and NAF POCs may participate and CRB members may be common to both the RVB and CRB. Panels will appoint a Secretariat to ensure the CRB charter, modification requests, meeting minutes, and monthly status of all open modifications are coordinated (through the HQ MCP) with affected parties. Out-of-cycle paper coordination is allowed for modification proposals needing expedited processing. Each CRB panel Secretariat will maintain prioritized AF IMT 1067 lists by Weapon System. Non-approved AF IMTs 1067 will be returned to originators. ITW/AA modifications will be forwarded to the Operations Approval Board (OAB) as prescribed by NI 10-3. In case of any OAB conflict with CRB actions, the appropriate AFSPC/A3/A4/A5/A6 CRB representative for their system will be in attendance at the OAB to cast the HQ AFSPC votes. **NOTE**: Some CRB actions may be performed by Operations Approval Panels (OAPs) or the Joint Requirements Integrated Product Team (JRIPT) representatives as described in NI 10-3.

2.3.1.3. Coordinate all AF IMT 1067 activities with the affected Wings/Using Commands/ NAFs.

2.3.1.4. Assist the SM/support agency in defining, planning, and budgeting for program funding (to include associated DT, OT, training, initial spares and technical data). Ensure updates to integrated priority lists are synchronized with PEM and SM/support agency activities such as budgeting, funds execution and cut drills.

2.3.1.5. Advocate and acquire necessary modification funding.

2.3.1.6. Participate in SM CCBs, as well as Technical Order (TO)/Technical Manual (TM) verification. Review and concur with Time Compliance Technical Order (TCTO) and TO modifications after verification.

2.3.1.7. Designate a Command Chief Engineer for tracking and monitoring the status of OSS&E for all modifications.

2.3.1.8. Designate AFSPC/A4M as MCP OPR to track, monitor, and report status of modifications.. The MCP will:

2.3.1.8.1. Forward validated AF IMTs 1067 to the SM or appropriate support agency for costing and implementation assessments (engineering solution and fielding options).

2.3.1.8.2. Forward approved/certified AF IMTs 1067 to the SM or appropriate support agency for action. Maintain updated integrated priority lists (by weapon system) to guide development and sustainment organization implementation of approved modifications.

2.3.2. When modification exceeds the AFI 10-601 MAJCOM threshold, refer to AFI 10-601 for appropriate budgetary and modification approval actions.

2.3.3. The SM or support agency will:

2.3.3.1. Establish, conduct and document a CCB IAW AFI 63-1101, including a means to track each modification proposal through a formal CCB approval process to modification completion.

2.3.3.2. Establish an Integrated Product Team, when necessary, to evaluate and manage Command-level modification proposals.

2.3.3.3. Conduct engineering reviews and investigations, to include performing initial feasibility assessments and/or engineering studies (as applicable) per **Figure 1.**, Block 4.

2.3.3.4. Accomplish risk assessments IAW AFMC Pamphlet (AFMCPAM) 63-101, ***Risk Management***, identifying risks in the following areas: Threat, Technology, Cost, Schedule, Engineering, Logistics, Manufacturing, and Developer's capabilities, etc., and IAW Air Force Pamphlet (AFPAM) 90-902, ***Operational Risk Management (ORM) Guidelines and Tools.***

2.3.3.5. Develop initial Budgetary Cost Information estimates to include, as a minimum, assessed costs for: Software/Hardware Design, Development and Test Engineering, Simulator/Trainer requirements, Initial Aircrew/Space Operations/Missile Crew and/or Maintenance Training, Trial Installation, Common and Peculiar Support Equipment, Engineering Data Modifications, TCTO and TM Change Pages/Updates, Acceptance Testing, Initial Spares, Readiness Support Spares Package (RSSP), Kit Material and Assembly, and Labor (kit unpacking, disassembly, installation, re-assembly and operational checkout/test).

2.3.3.6. Provide MDA recommendations for approved modifications greater than AFI 10-601 Lead MAJCOM thresholds. After coordination with HQ AFSPC, the SM will prepare MDA approval documentation and notify the MDA when the modification is complete. Also, the SM will re-evaluate the MDA recommendations at each phase of the program IAW AFI 63-1101.

2.3.3.7. Develop, maintain and implement a modification strategy, if appropriate, and determine which implementation delivery will incorporate the modification being considered.

2.3.3.8. Ensure AFSPC cognizant systems are modified to accommodate standardization, integration, interoperability, use of COTS or NDI components and information assurance IAW existing policy.

2.3.3.9. Initiate modification proposals for system replacements, when the SM has identified a modification need or has determined a technical refresh or system upgrade for life cycle cost considerations is needed. Submit SM-originated modification requests to the MCP for HQ RVB processing.

2.3.3.10. For modifications greater than the AFI 10-601 MAJCOM threshold, develop a management plan encompassing key areas and identifying the core documentation necessary for program management, execution and oversight. The management plan is a stand-alone document unless it is integrated into the Acquisition Plan/Single Acquisition Management Plan (SAMP) or Acquisition Strategy/Integrated Program Summary (IPS) as required by NSS Acquisition Policy 03-01.

2.3.3.11. Coordinate responsibilities for modification proposals affecting CIs managed by multiple SMs. Responsibilities will be documented in a Memorandum of Agreement (MOA)

between the affected SMs and will be coordinated with AFSPC/A4. For ICBMs, the SM will establish an MOA between AFSPC and the ICBM SPO on handling modifications.

2.3.3.12. Execute the modification program and ensure that required certifications are updated.

2.3.3.13. Ensure technical data modifications are validated, verified and incorporated into the affected manuals in conjunction with kit proofing and prior to the start of production installation.

2.3.3.14. Permanently maintain modification documentation and until operational acceptance has occurred, provide modification status quarterly (as a minimum) to the Lead Command.

2.3.3.15. Complete a Source of Repair Assignment Process (SORAP) for the modification, if required.

2.4. **Command-level Modification Documentation.** Documentation will describe the basic core requirements needed to approve the modification. These core requirements are defined as:

2.4.1. An approved need (see AFI 10-601 for specific requirements documents and limitations).

2.4.2. A description of the proposed modification (AF IMT 1067). Instructions for completing the AF IMT 1067 are found in AFI 63-1101.

2.4.3. Baselined costs, performance, and schedule parameters, and other budget documents, as required by DoD.

Figure 1. AFSPC Command-level Modification Process.

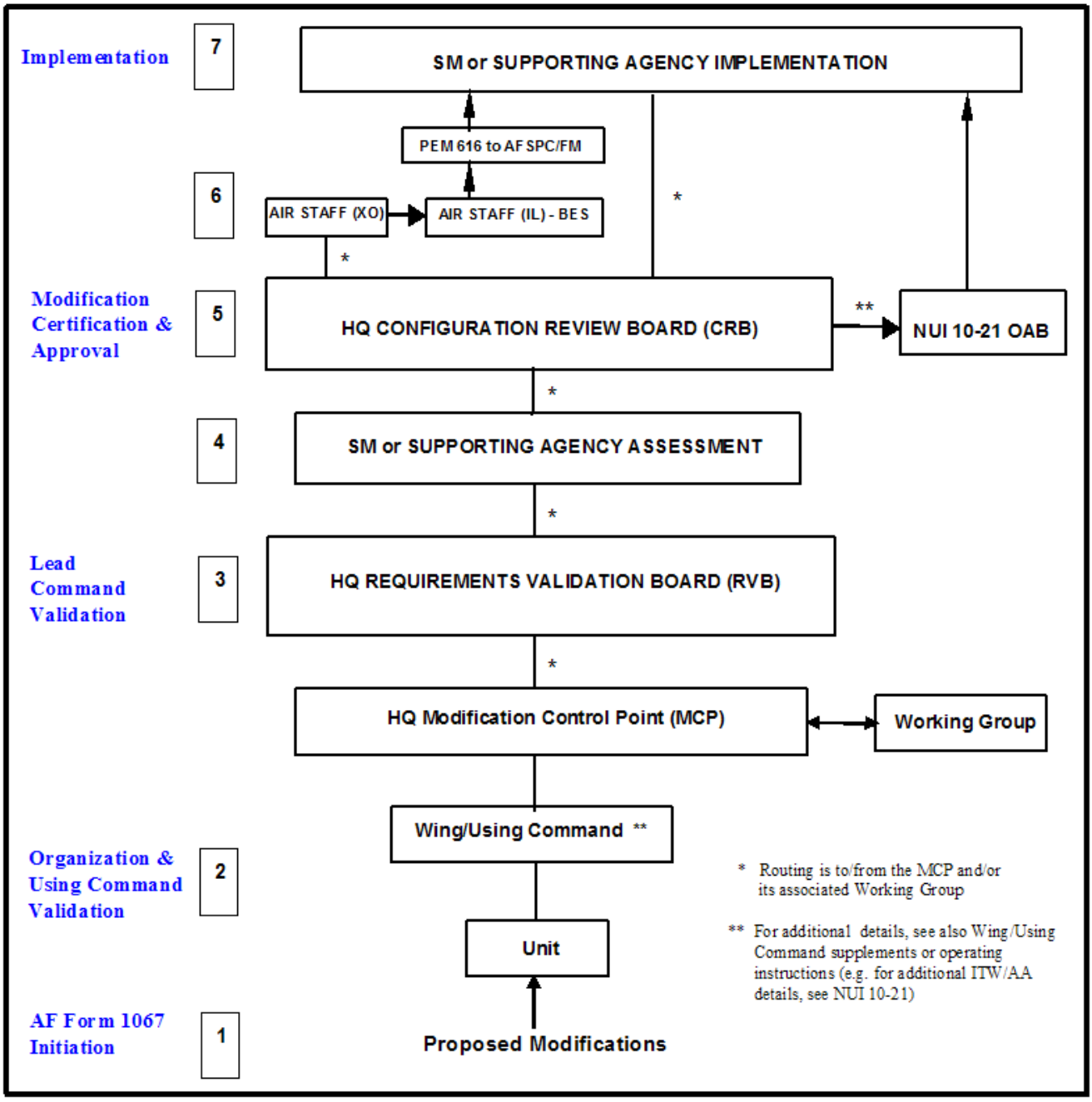

Figure 1. AFSPC Command-level Modification Process (Con't).

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Modification Initiation. AFSPC organizations, using agencies, the SM or other supporting agencies may initiate and send through the responsible Unit, Wing, or Using Command, requests for modifications to new and existing infrastructure and weapon systems using AF Form 1067s, for modifications that fall within the MAJCOM funding thresholds described in AFI 10-601.

Emergency or expedited modifications will be processed IAW **para 1.1.3. and 2.1.1.1**.

Requests for modifications derived from MDAP requirements, or for modifications to legacy infrastructure systems exceeding Lead MAJCOM thresholds as described in AFI 10-601, will be documented by HQ AFSPC, with inputs from the SM or other supporting agencies, based on AFSPC ORD requirements (or equivalent requirements/capabilities documents).

2

Organization and Using Command Validation. Originating Units will verify the validity of their organization's need by signing Part I on the AF Form 1067. AFSPC Wings, the SM, Numbered Air Force (NAF), and/or non-AFSPC Using Commands will verify the validity of modifications by signing Part II on the AF Form 1067. Delegation of specific requirements verification and prioritization authority and responsibilities between organizations will be formally documented by the affected organizations, with a copy forwarded to the MCP. In addition, AF Form 1067's will be forwarded to the MCP who will route all AF Form 1067s and acts as Secretariat for the RVB and CRB. The MCP will forward AF Form 1067s to the appropriate RVB Working Group for screening and review. AF Form 1067s will next be forwarded to the RVB for validation and prioritization. Urgent modifications may be submitted for "out-of-cycle" processing at anytime, but the AF Form 1067 must be accompanied by a memorandum of justification from the originating Wing/NAF commander, SM, System Support Manager, Product Line Manager, or their designated representative.

For joint program modifications where AFSPC serves as Lead Command, but Air Force is not Lead Service, the MCP will also send a copy of the modification to all affected Services/Commands. For joint program modifications where AFSPC is not Lead Command, the MCP will send a copy of the modification to all affected Services/Commands for their validation and prioritization.

3

Lead Command Validation. The RVB will review each proposed AF Form 1067 to ensure the stated need is clearly described, a priority has been assigned, technical analysis (if any) is warranted and any effect on existing operations and maintenance activities is understood. RVB validation will be indicated by signature in Part III of the AF Form 1067. Proposed modifications that are not validated will be returned through the MCP to the responsible Using Command and/or Wing for closure by the submitting Unit and originator. Validated modifications will next be forwarded to the SMs, or the appropriate supporting agency, for an engineering and cost analysis. RVB will determine requirement for OT or I&C prior to forwarding modification to the SM. For ITW/AA modifications, additional Change Control Manager guidance and procedures are described in NUI 10-21.

4

Single Manager Review and Approval. The SM or other supporting agency will perform a technical analysis of the proposed modification, develop alternatives and recommend an engineering solution as needed to obtain implementation approval. A cost estimate, including acceptance testing costs, and description of the recommended solution will be forwarded to the MCP along with the signed Part IV of the AF Form 1067. In addition, when needed, the MAJCOM will provide a cost estimate for operational testing for consideration by the CRB.

Figure 1. AFSPC Command-level Modification Process (Con't).

5 Lead Command Certification and Approval. The RVB members will also perform the Configuration Review Board approval/certification function IAW AFI 63-1101. The CRB will review each proposed modification to ensure the requirement is clearly described and will review the recommended solution and funding. Proposed modifications that are not approved or are to be rescinded will be returned through the MCP to the responsible Using Command and/or Wing for closure by the submitting Unit and originator. The CRB will sign Part V of the AF Form 1067 for all approved modifications not requiring Air Staff approval, OAB approval, or further funding action. These approved modifications will be coordinated with the originating organization (e.g., users, Wings, etc.) and then forwarded to the SMs or the appropriate supporting agency for implementation. ITW/AA modifications will be forwarded to the applicable OAP as prescribed by NUI 10-21. In case of any OAB conflict with CRB actions, key CRB members will be in attendance at the OAB to cast the HQ AFSPC votes. For joint program modifications where AFSPC serves as Lead Command but Air Force is not Lead Service, if the proposed modification is disapproved, or to be rescinded, it will be returned by AFSPC to the originator with rationale for the disapproval. For joint program modifications where AFSPC is not Lead Command, if the proposed modification is disapproved or rescinded, it will be returned by the lead agency with rationale for the disapproval. For both modification approvals and disapprovals, the MCP will provide an information copy of the AFSPC approval board action to all affected Services and Commands.

6 Air Staff Approval. Proposed modifications validated by HQ AFSPC, but requiring Air Staff approval IAW AFI 10-601, will be forwarded to HQ USAF/XOS through the HQ AFSPC CRB. Funding requests will be submitted to USAF/IL for the Budget Estimate Submission (BES). For AFSPC Organizational Activity Code funds, the appropriate Air Staff PEM submits an AF Form 616, **Fund Cite Authorization**, to HQ AFSPC/FM. Upon receipt of funding, HQ AFSPC/FM will notify the appropriate AFSPC PEM and forward the AF Form 616 to the implementing SM or supporting agency in the execution year. HQ USAF/XOS will notify HQ AFSPC via the MCP of modification approval/certification by signing Part V of the AF Form 1067. Proposed modifications not approved and funded by the Air Staff will be returned to the originator by the MCP.

7 Implementation. Following receipt of approval and funding authorization for a proposed modification, the SM or the appropriate supporting agency will begin CM (including CCB activities) and commence implementation. Implementers will work the prioritized and funded modifications in the year and precedence set by the AFSPC or Air Staff approval authority. If deviations are deemed necessary, the SM will coordinate any proposed changes with the approval authority. AFSPC and/or using agencies will review implementation activities from inception through testing and acceptance and be furnished implementation status information by the SM. The SM or the appropriate supporting agency will also provide HQ USAF/XOS and HQ AFSPC status of all implementation activities via the MCP.

2.5. **Modification Completion.** As part of modification completion, other tasks must be accomplished to provide an audit trail for the AF system/items/equipment involved in the modification. The SM or appropriate support agency will ensure proper disposal for modification kits that become excess IAW AFI 63-1101. For configuration control and management purposes, a complete copy of the modification package will be maintained IAW the "**AF Record Disposition Schedule**" website (**https://afrims.amc.af.mil**).

3. Wing-level Modification Processing:

3.1. The process flow for both temporary and permanent Wing-level modifications is shown (with block descriptions) at **Figure 2.** Wing-level modifications include depot level software and hardware alterations to AFSPC cognizant systems' form, fit, or function, in addition to changes to databases, baseline drawings, published specifications and configurations, technical orders/ technical manuals, etc., that are not within scope of the Command-level modification process, as described in **paragraph 1.8.** Organizational and depot level maintenance software activities are further described in **Attachment 2**. Organizational level maintenance activities are not governed by this instruction.

3.2. Wing-level modification proposals may be submitted via an AF IMT 1067, or via a SCF data sheet (or other equivalent Wing local form authorized by the Command Chief Engineer). An information copy of each Wing-level modification proposal will be forwarded to the Command Engineer through the MCP. If the MCP or Command Chief Engineer determines a Wing-level modification requires Command-level modification processing, it will be processed as described in **paragraph 2.** Note, numbering on the Command-level modification proposal and on the attached Wing local form (if any), need not be identical, but must cross-reference one another.

3.3. **Roles and Responsibilities for Wing-level Modifications.**

3.3.1. The Lead Command will:

3.3.1.1. Through AFSPC/A4M, the MCP OPR, track, monitor, and report status of Wing-level modifications.

3.3.1.2. Review all Wing-level modifications and notify wing when modifications need to be processed as Command-level modification proposals as described in **paragraph 1.8.** Coordinate modification activities with any other affected commands and agencies.

3.3.1.3. Assist the SM in defining, planning, and budgeting for Wing-level modification funding (to include associated acceptance testing, training, initial spares, and technical data).

3.3.1.4. Advocate acquiring necessary funding.

3.3.2. The Wing /Using Command for the infrastructure or weapon system to be modified will:

3.3.2.1. Establish and conduct a Wing Requirements Validation/Approval Board (WRVB), or equivalent, to review and validate all modifications per **Figure 2.**, Block C, and to provide status of modification requests to originators. Also, provide copies of Wing/Using Command instructions and charters governing WRVB procedures to AFSPC/A4.

3.3.2.2. Forward validated modifications to the SM or appropriate support agency for costing and implementation assessments (engineering and fielding options). Provide AFSPC/A4 an information copy.

3.3.2.3. Conduct a WRVB to review the recommended SM solution, validate proposed prioritization and approve Wing-level modification proposals, per **Figure 2.**, Block E.

3.3.2.4. Forward approved modifications to the SM for action. Provide inputs to the SM or appropriate support agency prioritized modification list (by weapon system).

3.3.2.5. Participate in Lead Command RVBs and CRBs for proposed modifications that are to be processed as Command-level modifications as described in **paragraph 1.8.**

3.3.2.6. Participate in SM CCBs, as well as TO/TM verification reviews. Concur with TCTO and TO modifications after verification.

3.3.2.7. Assist the SM in defining, planning, and budgeting for funding modifications (to include associated acceptance testing, training, initial spares and technical data). Ensure updates to prioritized modification lists are synchronized with PEM activities such as budgeting, funds execution and cut drills.

3.3.3. The SM or support agency will:

3.3.3.1. Establish a means for tracking each validated and approved Wing-level modification through a formal CCB approval process to implementation completion. Maintain an updated prioritized modification list (by weapon system) to guide development and sustainment organization implementation of approved modifications. Provide MCP an information copy.

3.3.3.2. Establish an Integrated Product Team, when necessary, to evaluate and manage Wing-level modifications.

3.3.3.3. Conduct engineering reviews and investigations, to include performing initial feasibility assessments, cost estimates and/or engineering studies (as applicable).

3.3.3.4. Accomplish risk assessments IAW AFMCPAM 63-101, identifying risks in the following areas: Threat, Technology, Cost, Schedule, Engineering, Logistics, Manufacturing, and Developer's Capabilities, etc., and IAW AFPAM 90-902.

3.3.3.5. Develop, maintain and implement a block modification strategy, if appropriate, and determine which modification block will incorporate the modification being considered.

3.3.3.6. Establish, prepare documentation for, and conduct a CCB IAW AFI 63-1101.

3.3.3.7. Ensure technical data modifications are validated, verified and incorporated into the affected manuals in conjunction with kit proofing and prior to the start of production installation.

3.3.3.8. Permanently maintain modification documentation and, until operational acceptance has occurred, provide status of modifications quarterly (as a minimum) to the Lead Command and Wing/Using Command.

3.3.3.9. Ensure AFSPC cognizant systems are modified to accommodate standardization, integration, interoperability, use of COTS or NDI components and information assurance IAW existing policy.

3.3.3.10. Initiate modification proposals for system replacements, when the SM has identified a modification need or has determined a technical refresh or system upgrade for life cycle cost considerations is needed. Submit SM-originated modification requests to the MCP for WRVB processing.

Figure 2. AFSPC Wing-level Modification Process.

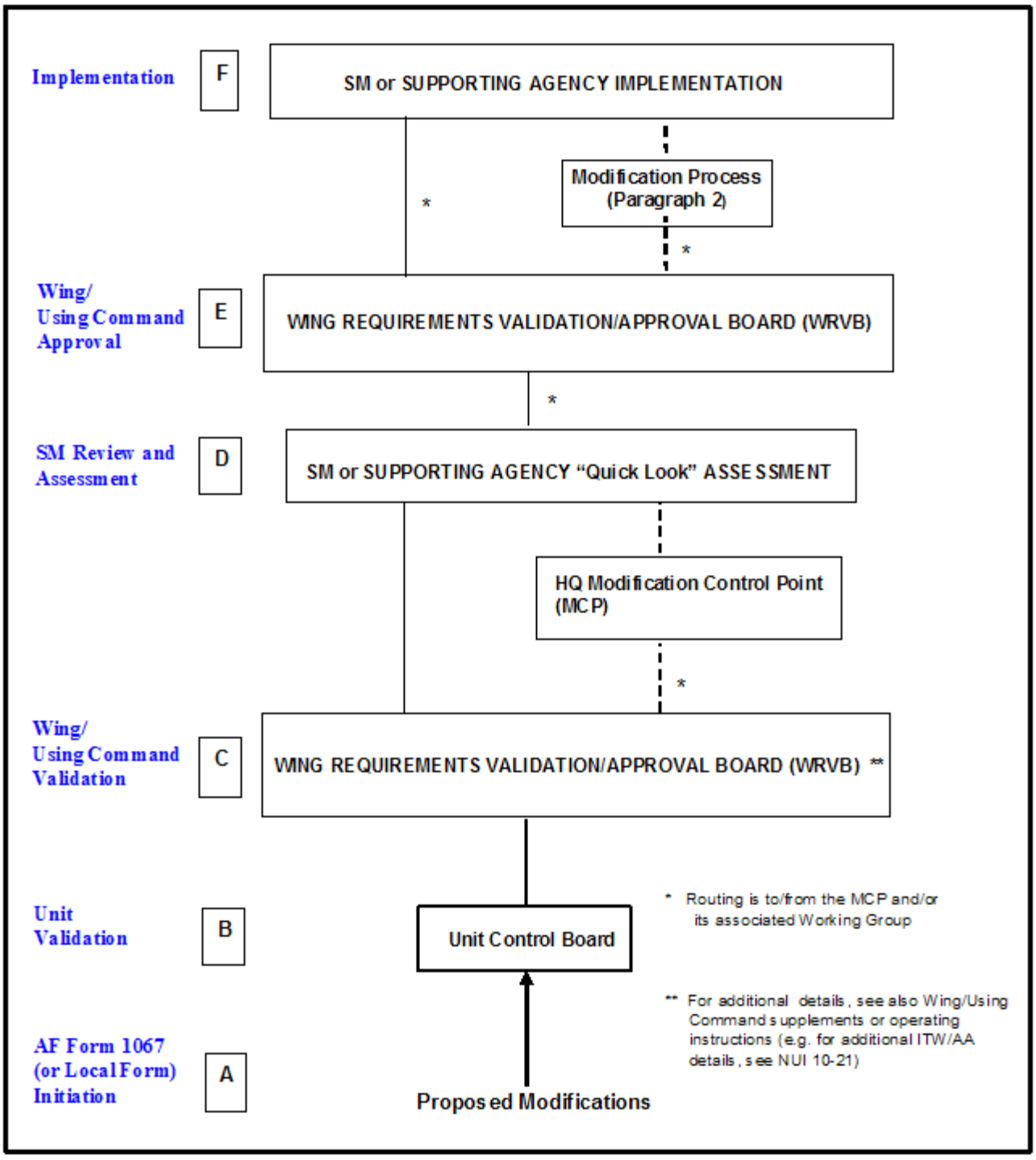


Figure 2. AFSPC Wing-level Modification Process (Con't).

A

Modification Initiation. AFSPC organizations, using agencies, the SM or other supporting agencies may initiate and send, through the responsible AFSPC Unit, requests for modifications to new and existing infrastructure and weapon systems, using authorized modification forms for submitting Wing-level modifications (as described in **paragraph 3**).

Emergency modifications will be processed IAW **para 1.1.3**. Local instructions will describe expedited Wing-level processing procedures.

B

Unit Validation. Originating Units will verify the validity of their organization's need by signing the Unit validation block on a modification request form. The Unit may also assign an initial priority to the modification.

C

Wing/Using Command Validation. AFSPC Wings and/or non-AFSPC Using Commands will conduct a WRVB to ensure the stated need is clearly described, a priority has been assigned, acceptance testing requirements are identified, any needed technical analysis has been provided and that the effect on existing operations and maintenance activities is understood prior to validation. The WRVB OPR will validate the modification by signing their validation blocks on the modification form. Validated ITW/AA modifications will be processed by the Modification Control Manager IAW NUI 10-21. Proposed modifications that are not validated will be returned to the submitting Unit and originator. If Command-level modification processing is required (see paragraph 2), the proposed modification will be returned to the submitting Unit for generation of an AF Form 1067 modification proposal. Urgent modification requests may be submitted for "out-of-cycle" processing at anytime, but must be accompanied by a memorandum of justification from the originating commander or designated representative. Delegation of specific requirements validation and prioritization authority, processes and responsibilities between organizations will be formally documented by the affected organizations, with a copy forwarded to the MCP. In addition, an information copy of each modification will be forwarded to the MCP who will review the proposed modification for multi-system impact and to ensure Command-level modification processing is not required. Where AFSPC is not Lead Command, the MCP will also send a copy of the proposed modification to all affected Services/commands for their validation.

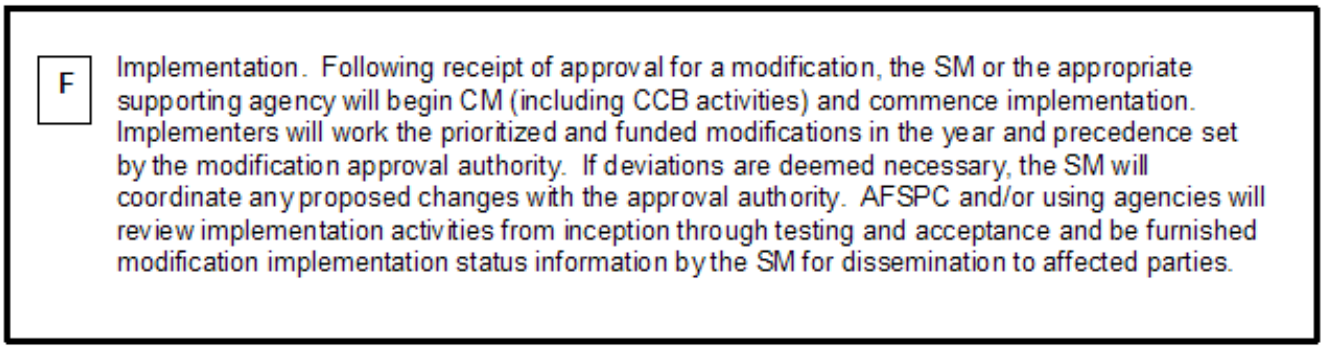
D

Single Manager Review and Assessment. The SM or other supporting agency will perform a "quick look" technical analysis of the proposed modification, develop alternatives and recommend an engineering solution, as needed, to obtain approval of the proposed modification. When requested by the WRVB, a cost estimate and description of the recommended solution and cost of any SM-provided operational testing support will be provided along with the SM's signature on the modification form. In addition, when needed for approval, the Wing will provide a cost estimate for operational testing, for consideration by the WRVB.

E

Wing/Using Command Approval. Before approving the modification by signing the approval block on the modification form, the WRVB will review each validated modification to ensure the requirement is clearly described, properly prioritized and the recommended solution and funding source has been identified. In addition, information on the disposition of each modification will be forwarded to the MCP. Approved modifications will be coordinated with the originating organization and then forwarded to the SMs or the appropriate supporting agency for implementation. If the proposed Wing-level modification has been disapproved, the WRVB will return the modification to the submitting Unit and originator with rationale for the disapproval.

Figure 2. AFSPC Wing-level Modification Process (Con't).



4. IMTs or Forms Adopted:

4.1. AF IMT 616, **Fund Cite Authorization (FCA)**

4.2. AF IMT 1067, **Modification Proposal**

4.3. AF IMT 3525, **CCB Modification Requirements and Approval Document**

4.4. **Standard Change Form data sheet**

Bradley W. Butler, Brigadier Gen, USAF
Director, Logistics and Communications

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

NSS Acquisition Policy 03-01**, Guidance for** ***DoD Space Acquisition Process***

DCID 6/3, ***Protecting Sensitive Compartmented Information within Information Systems***

Title 10, United States Code, ***Armed Forces***

AFPD 10-9***, Lead Operating Command Weapon Systems Management***

NI 10-3**,** ***Mission Integrity, Change Control Management, and Test Control for the Integrated Tactical Warning and Attack Assessment (ITW/AA) System***

AFI 10-601***, Capabilities Based Requirements Development***

AFI 10-901, ***Lead Operating Command – Communications and Information Systems Management***

AFI 21-116**,** ***Maintenance Management of Communications-Electronics***

AFMAN 23-110 Vol 2, ***USAF Supply Manual***

AFSPCI 32-1005**,** ***Intercontinental Ballistic Missile (ICBM) Real Property/Real Property Installed Equipment Responsibilities***

AFSPCI 33-202, ***Information Assurance (IA)***

TO 00-35D-54, ***USAF Materiel Deficiency Reporting and Investigating System***

AFMAN 37-139, ***Records Disposition Schedule***

MIL-HDBK-61A*,* ***Configuration Management Guidance***

AFPD 63-5, ***Quality Assurance***

AFMCPAM 63-101, ***Risk Management***

AFI 63-1101, ***Modification Management***

AFI 63-1201, ***Assurance of Operational Safety, Suitability, & Effectiveness (OSS&E)***

AFPAM 90-902, ***Operational Risk Management (ORM) Guidelines and Tools***

CJCSI 3170.01E, ***Joint Capabilities Integration and Development System***

DODI 5000.2, ***Operation of the Defense Acquisition System***

HQ AFSPC Launch Test Range System (LTRS) Validation Board Management Guide

Abbreviations and Acronyms

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFMCPAM—Air Force Materiel Command Pamphlet

AFPAM—Air Force Pamphlet

AFPD—Air Force Policy Directive

AFSPC—Air Force Space Command

AFSPCI—Air Force Space Command Instruction

BES—Budget Estimate Submission

CCB—Configuration Control Board

CDD—Capability Development Document

CI—Configuration Item

CJCSI—Chairman of the Joint Chiefs of Staff Instruction

CM—Configuration Management

COTS—Commercial Off-The-Shelf

CPD—Capability Production Document

CRB—HQ Configuration Review Board

CRD—Capstone Requirements Document

DCID—Director of Central Intelligence Directive

DISA—Defense Information Systems Agency

DITSCAP—DoD Information Technology Security Certification and Accreditation Process

DoD—Department of Defense

DODI—Department of Defense Instruction

DT&E—Developmental Test and Evaluation

FCA—Fund Cite Authorization

HQ—Headquarters

IA—Information Assurance

IAW—In Accordance With

ICBM—Intercontinental Ballistic Missile

ICD—Initial Capabilities Document

IMT—Information Management Tool

IPS—Integrated Program Summary

ISS—Initial Spares Support

ITW/AA—Integrated Tactical Warning and Attack Assessment

JCD—Joint Capabilities Document

JRIPT—Joint Requirements Integrated Product Team

KPP—Key Performance Parameter

LTRS—Launch Test Range System

MAJCOM—Major Command

MCP—Modification Control Point

MDA—Milestone Decision Authority

MDAP—Major Defense Acquisition Program

MNS—Mission Needs Statement

MOA—Memorandum of Agreement

MOE—Measure of Effectiveness

MOP—Measure of Performance

NAF—Numbered Air Force

NDI—Non-Developmental Items

NORAD—North American Aerospace Defense Command

NSS—National Security Space

NI—NORAD Instruction

N/UWSS—NORAD/USSPACECOM Warfighting Support System

OAB—Operations Approval Board

OAP—Operations Approval Panel

OPR—Office of Primary Responsibility

OPSEC—Operations Security

ORD—Operational Requirements Document

ORM—Operational Risk Management

OSS&E—Operational Safety, Suitability, & Effectiveness

OT—Operational Test

PEM—Program Element Monitor

PMD—Program Management Directive

PPBE—Planning, Programming, Budgeting and Execution

RCM—Requirements Correlation Matrix

RP/RPIE—Real Property/Real Property Installed Equipment

RSSP—Readiness Support Spares Package

RVB—Requirements Validation Board

SAMP—Single Acquisition Management Plan

SCF—Standard Change Form

SM—System Manager

SORAP—Source of Repair Assignment Process

SPO—System/Services Program Office

SWC—Space Warfare Center

T-1—Temporary-1 Modification

T-2—Temporary-2 Modification

TCTO—Time Compliance Technical Order

T&E—Test and Evaluation

TM—Technical Manual

TO—Technical Order

USSPACECOM—United States Space Command

WRVB—Wing Requirements Validation Board

Terms

AFSPC Cognizant Systems—Fielded (i.e. after turnover to operations) AFSPC aircraft, Space Launch, Launch Test Range, missile, and space systems (including equipment and mission components) acquired and sustained by AFSPC, AFMC and other supporting agencies, and programs and systems where HQ AFSPC has been assigned Title 10 responsibilities, as well as fielded non-AFSPC systems essential for the execution of AFSPC missions. This instruction does not govern resources not managed by AFSPC (e.g. Defense Information Systems Agency (DISA) communications systems/services)

Alteration—An addition, deletion, or upgrade to hardware, firmware, software and/or documentation in order to correct a deficiency or provide/improve a capability.

Approval—Approval of a proposed modification occurs when the authorization board voting membership authorizes proceeding with implementation of the requested modification. Approval occurs after the authorized board considers all review comments, the SM or other supporting agency preliminary engineering and cost evaluations, and funding availability.

Configuration Control—The configuration control process and procedures designating the level of control through which each work product must pass (for example, author control, project-level control, acquirer control); identifying the persons or groups with authority to authorize alterations and to make alterations at each level (for example, the programmer/analyst, the software lead, the project manager, the acquirer); and the steps to be followed to obtain required authorization for alterations; to process, track and distribute them; and to maintain past versions. It is also the process used by contractors and Government program offices to manage preparation, justification, evaluation, coordination, disposition, and implementation of proposed engineering modifications and deviations to affected CIs and baselined configuration documentation IAW MIL-HDBK-61, Section 4. In addition, configuration control provides the mechanism to build software systems for tests that have a known configuration and can be exactly reproduced.

Configuration Identification—The ability to identify what information has been approved for concurrent use in the project, who owns the information, how the information was approved for configuration management control, and to designate the latest approved release.

Configuration Management—The systematic process to establish and maintain the integrity and control of a system (a Configured Item) or system modification (the alteration of a Configured Item) throughout a project's life cycle. This includes products such as performance requirements, functional and physical attributes, and design and operation information. CM is a discipline applying both technical and administrative direction for the control of change and the integrity of the product data and documentation. CM provides Configuration Identification, Configuration Control, and Status Accounting, as well as Reviews and Audits.

Depot level Software Activities—Depot level maintenance is SM (e.g., System Program Office or support agency) provided. The twelve depot level support functions are: fix emergency problems; analyze problems; develop technical solutions; design, develop and modify software; certify software releases; maintain integration; maintain integrity; distribute software releases; perform CM; improve technology; perform special studies; and maintain software support resources (see **Attachment 2** for details). These functions are further defined through procedures jointly developed with the weapon system SM.

Fit (limited to hardware items)—The ability of an item to physically interface or interconnect with or become an integral part of another item.

Form—The shape, size, dimension, mass, weight and other physical parameters that uniquely characterize an item. For software, form denotes the language and media.

Function—The action or actions that an item is designed to perform.

Interface—Alterations to the performance, functional and physical characteristics required to exist at a common boundary between systems, components, and units or for connecting CIs within a system.

Key Performance Parameter—Capabilities and characteristics so significant that failure to meet the threshold value is cause for the concept or system selection to be reevaluated and the program to be reassessed or terminated. Key performance parameters are extracted from the JCD, CRD, CDD, CPD, and/or ORD and included in the Acquisition Program Baseline at each milestone.

Joint Programs—Mission systems that have users from other commands, services or agencies are considered joint programs. The DoD appoints the lead service. If the Air Force is appointed the lead service, then HQ USAF appoints a lead command via AFPD 10-9. The lead command is responsible for the administrative details and advocacy for procurement funds for any modifications to joint programs, regardless of what service or agency requests the alteration.

Lead Command—The command that serves as the operators' interface with the SM for a system as defined by AFPD 10-9, not to be confused with the Air Force MAJCOM designated by HQ USAF/A5R as OPR for authoring the system's capabilities-based requirements document. The Lead Command is responsible for programming for and prioritization of modification requirements by building consensus and advocating the needs of requiring commands.

Lead Service—The DoD organization or service component that has programming and prioritization responsibilities for a joint system. Appointed by a CJCS Memorandum of Policy or other official document.

Measure of Effectiveness—A qualitative or quantitative measure of a system's performance or a characteristic that indicates the degree to which it performs the task or meets a requirement under specified conditions. MOEs should be established to measure the system's capability to produce or accomplish the desired result.

Measure of Performance—A quantitative measurement of the system's capability to accomplish a task. MOPs are typically in the area of physical performance (e.g., range, velocity, throughput, payload weight, etc.)

Organizational level Software Activities—Organizational level maintenance is operator/user-provided. The seven organizational level support functions are: identify operational requirements, validate operational capability, certify operational capability, control operational configuration, maintain database operational parameters, identify problems and restore operations (see **Attachment 2** for details). These functions are further defined through procedures jointly developed with the weapon system SM.

Reviews and Audits—Frequent evaluation of the content, baseline integrity, and release integrity of all controlled products to ensure they conform to their configuration documents. Information to be controlled includes software and its associated documentation; interface requirements and documentation; engineering artifacts resulting from the methods and tools used by the project; trade studies and user requirements, needs, and expectations; management plans; information and reports; project tools and users' manuals; project records and history; test plans, procedures, cases, scenarios, and data; and test tools (anything concurrently used across project organizations or approved for sharing).

Status Accounting—Formalized recording and reporting of the established configuration documents, the status of proposed alterations, and the status of the implementation of approved modifications and modifications. Status record information provides an accessible and current record of the status of each controlled piece of information that is planned to be used, the content of each release from CM, and who has checked out or is working on a piece of information that the test organization plans on accessing through CM.

System—An organized assembly of hardware and software resources united and regulated by interaction or interdependence to accomplish a set of specific functions. Subsystems are subordinate systems that are part of the system's configuration and essential to the system's performance. Systems are composed of units, components, and subsystems that function together to produce the capabilities that the system is designed to accomplish.

System Manager (SM)—As used in this instruction applies collectively to System Program Director, System Program Organization Manager, Product Group Manager, Single Manager, Sustainment Manager, or acquisition program manager. The SM is the designated individual with responsibility for and authority to accomplish modification objectives to meet the user's operational needs. The SM shall be accountable for credible cost, schedule and performance reporting for SM-managed modifications.

Validation—AFSPC requirements, operations, maintenance and logistics organizations review each proposed modification to operational systems, as well as the associated proposed solution for essentiality, cost effectiveness and feasibility. Comments by the appropriate validation board are included on the AF IMT 1067 or equivalent IMT or form, prior to further disposition.

Weapon System—A combination of elements that function together to produce the capabilities required to fulfill a mission need, including hardware, equipment, software, and all Integrated Logistics Support elements, but excluding construction or other improvements to non-weapon system real property. One or more weapons with all related equipment, materials, services, personnel and means of delivery and deployment (if applicable) required for self-sufficiency.

Attachment 2

SOFTWARE ACTIVITIES

A2.1. Organizational Level Maintenance:

A2.1.1. IDENTIFY OPERATIONAL REQUIREMENTS. Identify, prioritize and approve new requirements for, or changes to, an operational system. Select the best overall solution to meet requirements from the executable option(s) provided by the SM or support agency (consider technical, schedule, cost and risk factors in making the decision). Participate in system life-cycle activities such as program management reviews, design reviews, tests and audits for depot level modifications.

A2.1.2. VERIFY OPERATIONAL CAPABILITY. Participate in the development and planning of DT&E. Perform OT to determine the operational effectiveness and suitability of a system under realistic operating/combat conditions and to determine if operational performance requirements and supporting requirements (e.g., procedures, documentation and training) specified in requirements documents have been satisfied.

A2.1.3. CERTIFY OPERATIONAL CAPABILITY. Determine that a software release is effective and suitable for operational use, based on OT results and any additional tests or operational trial period held to ensure the system is ready to support operations. For AFSPC cognizant systems, AFSPC will ensure data integrity is maintained.

A2.1.4. CONTROL OPERATIONAL CONFIGURATION. Prioritize and approve the schedule for installation of modifications and software releases for a system.

A2.1.5. MAINTAIN DATABASE OPERATIONAL PARAMETERS. Maintain the database (e.g., change operational data values). This does not normally include changing the structure of the database, values embedded in the system's code or the system's code embedded in the database.

A2.1.6. IDENTIFY PROBLEMS. Identify symptoms (e.g., error codes, error messages and invalid output products, etc.) that indicate the system is not performing according to the system specifications. The operator will identify the priority of each reported problem.

A2.1.7. RESTORE TO OPERATIONS. Restore the system to operational status through the use of SM/support agency-defined procedures or the installation of a SM/support agency-provided software release. For some systems, AFSPC or other using agencies may need a small number of people who are expert in systems operations and who can determine when systems require depot level maintenance support.

A2.2. Depot Level Maintenance:

A2.2.1. FIX EMERGENCY PROBLEMS. Expedite emergency modifications. This will usually require rapid, out-of-cycle problem resolution and solution implementation.

A2.2.2. ANALYZE PROBLEMS. Identify causes of problems and propose solution(s).

A2.2.3. DEVELOP TECHNICAL SOLUTIONS. Provide the customer the proposed options, cost estimates, recommendations, impacts to other systems and perceived risks associated with proposed technical solution(s) to meet validated requirements. The information must be sufficient for the customer to make informed decisions on the risks and the total system costs associated with the imple-

mentation of the proposed technical solutions. Also, the information should identify any consolidation of validated requirements.

A2.2.4. DESIGN, DEVELOP, AND MODIFY SOFTWARE. Develop and maintain operational software to satisfy requirements, prevent performance degradation, prevent or correct system failures, provide for system growth, or improve overall system capabilities and effectiveness, as directed by the user. Conduct comprehensive DT&E under realistic operating conditions.

A2.2.5. CERTIFY SOFTWARE RELEASES/MODIFICATIONS. Certify that new software releases or modified software satisfies the validated requirements and meets Air Force, NORAD, USSPACECOM and/or AFSPC standards, as applicable.

A2.2.6. MAINTAIN INTEGRATION. Ensure all required interfaces within and among systems are identified, maintained and not corrupted.

A2.2.7. MAINTAIN INTEGRITY. Ensure changes will not degrade the integrity of the system (the system will correctly process the data it receives, will be reliable and accurate and will be able to meet mission response requirements).

A2.2.8. DISTRIBUTE SOFTWARE RELEASES. Provide the customer a certified software release package containing, for example, the modified software baseline, version description, installation procedures, operator checklists, system/training documentation and results of developmental tests. Provide any additional software or data required by AFSPC for exercise and test scenarios associated with the software release.

A2.2.9. PERFORM CONFIGURATION MANAGEMENT. Identify, control, account for and audit the functional and physical characteristics of a system, its interfaces and documentation.

A2.2.10. IMPROVE TECHNOLOGY. Identify and perform technology upgrades or modifications, with user approval, to increase the system's flexibility, power, readiness and safety; correct design deficiencies; improve software processes; maintain the combat effectiveness of the operational system; or decrease its operations and maintenance costs.

A2.2.11. PERFORM SPECIAL STUDIES. Perform special studies that the operators/users may occasionally need.

A2.2.12. MAINTAIN SOFTWARE SUPPORT RESOURCES. Perform functions necessary to maintain software support resources and infrastructure to assure continued software support of AFSPC operational systems.